

NOTES ON A COLLECTION OF FISH FROM THE HEADWATERS OF THE BHAVANI RIVER, SOUTH INDIA

BY

S. RAJAN

(From the Laboratories of the Zoological Survey of India, Calcutta)

INTRODUCTION

Two collections of fish were made at different periods in 1954, from the Bhavani and Moyar rivers and some of their tributaries. The first collection, mainly from the Moyar watershed, was made from February to April. The second collection was made from both the rivers from September to November. Since the collection is fairly representative of the area surveyed, it is intended to report on it. The Bhavani River drains the southern and the Moyar River the north-eastern face of the Nilgiri Hills.

Since the publication of Day's volume on Fishes in the Fauna of British India series (1889) the only other comprehensive list of fishes of the Nilgiri and Wynad Hills is that given by Hora (1942)¹. The present collection, which comprises 2380 specimens, can be referred to 48 species and was made at different altitudes. Above 5000 feet, only specimens of *Danio* Hamilton, *Rasbora* Bleeker, *Tor* Gray and *Noemacheilus* van Hasselt were collected, while these and the other genera given in the list below occur at lower altitudes. Naturalised species, namely, *Carassius carassius* (Linnaeus); *Cyprinus carpio* (Linnaeus) var. *communis* and var. *specularis*; *Tinca tinca* (Bloch) and *Gambusia affinis* Baird and Girard were obtained from the Ootacamund Lake while *Salmo levenensis* Walker² was collected from the Krurumund River.

LOCALITIES

For the sake of brevity, the localities are tabulated as follows :—

No.	Localities	No. of Stations
1.	Bhavani River, between Chindaki and Bhavanisagar ...	29
2.	Kunda River	2
3.	Taimalai Stream	1
4.	Pykara River, between Mukurti Dam and Wood Estate	5
5.	Krurumund River	1
6.	Moyar River, between Moyar Division of Government Cinchona Plantations, Naduvatam and Gazalhatti ...	6
7.	Stream running through Devarshola Estate, crossing the Gudalur Sultan Battery Road at Mile 4/3 ...	2
8.	Stream in Devon Estate, Devarshola ...	2
9.	Stream below the Tea Experiment Station, Devarshola ...	2
10.	Stream in Kekkathalla	1
11.	Sandy Nullah River	1
12.	Kokkal Stream	1
13.	Siruvani River	1

¹ Hora, S. L., *Rec. Ind., Mus.*, 44. pp. 193-200 (1942).

² Misra, K. S., *Rec. Ind. Mus.*, 45. p. 412 (1947).

LIST OF SPECIES

Name of Species	Number of Specimens	Standard Length in mm.	
		Minimum	Maximum
Family Cyprinidae			
Sub-family Abramadinae			
1. <i>Chela atpar</i> (Hamilton)	... 222	31.25	- 82.00
2. <i>Chela laubuca</i> (Hamilton)	... 11	34.00	- 56.75
3. <i>Oxygaster argentea</i> (Day)	... 172	25.25	- 99.75
4. <i>Oxygaster clupeoides</i> (Bloch)	... 19	64.25	- 99.00
Sub-family Rasborinae			
5. <i>Barilius bendelisis</i> Hamilton	... 4	52.50	- 74.00
6. <i>Barilius galensis</i> (Valenciennes)	... 175	19.25	- 89.00
7. <i>Danio aequipinnatus</i> (McClelland)	... 832	15.00	- 83.25
8. <i>Esomus barbatus</i> (Jerdon)	... 136	38.25	- 71.25
9. <i>Rasbora daniconius</i> (Hamilton)	... 55	22.50	- 72.75
Sub-family Cyprininae			
10. <i>Amblypharyngodon melettina</i> (Valenciennes).	103	42.00	- 68.25
11. <i>Puntius amphibioides</i> (Valenciennes)	... 26	45.25	- 88.00
12. <i>Puntius carnaticus</i> (Jerdon)	... 37	23.00	- 250.00
13. <i>Puntius chola</i> Hamilton	... 5	62.00	- 77.50
14. <i>Puntius curmuca</i> (Hamilton)	... 1	43.75	
15. <i>Puntius dorsalis</i> (Jerdon)	... 1	31.25	
16. <i>Puntius dubius</i> Day	... 3	91.00	- 107.50
17. <i>Puntius filamentosus</i> (Valenciennes)	... 4	33.00	- 56.50
18. <i>Puntius jerdoni</i> Day	... 3	46.50	- 61.25
19. <i>Puntius melanampyx</i> (Day)	... 18	26.00	- 48.50
20. <i>Puntius micropogon</i> (Valenciennes)	... 5	82.00	- 169.00
21. <i>Puntius pulchellus</i> (Day)	... 16	36.25	- 95.00
22. <i>Puntius sarana</i> (Hamilton)	... 10	76.50	- 106.00
23. <i>Puntius sophore</i> Hamilton	... 33	43.75	- 56.25
24. <i>Puntius ticto ticto</i> Hamilton	... 164	14.75	- 50.00
25. <i>Tor khudree</i> (Sykes)	... 2	98.00	- 200.00
26. <i>Osteochilus (Kantaka) brevidorsalis</i> (Day)	... 8	54.75	- 126.25
27. <i>Osteochilus (Osteochilichthys) nashii</i> (Day)	... 1	36.00	
28. <i>Labeo kontius</i> (Jerdon)	... 31	94.50	- 156.00
Sub-family Garrinae			
29. <i>Cirrhitina reba</i> (Hamilton)	... 25	89.00	- 140.00
30. <i>Garra mullya</i> (Sykes)	... 16	21.50	- 112.00
31. <i>Garra jerdoni</i> (Day) ¹	... 31	73.00	- 125.00
32. <i>Garra stenorhynchus</i> (Jerdon)	... 72	26.00	- 120.00
Family Cobitidae			
33. <i>Lepidocephalus thermalis</i> (Valenciennes)	... 11	25.00	- 48.75
34. <i>Noemacheilus beazani</i> Günther	... 9	33.00	- 49.75
35. <i>Noemacheilus denisonii</i> Day	... 2	30.75	- 32.75
36. <i>Noemacheilus guentheri</i> Day	... 1	52.00	
37. <i>Noemacheilus monilis</i> Hora	... 2	46.00	- 46.75
Family Siluridae			
38. <i>Ompok bimaculatus</i> (Bloch)	... 1	259.25	
39. <i>Silurus berdmorei wynaadensis</i> Day	... 1	99.00	
Family Bagridae			
40. <i>Mystus cavasius</i> (Hamilton)	... 3	97.25	- 118.50
41. <i>Mystus malabaricus</i> (Jerdon)	... 3	79.75	- 81.00
42. <i>Mystus punctatus</i> (Jerdon)	... 1	320.00	
43. <i>Mystus vittatus</i> (Bloch)	... 18	54.00	- 73.00

¹ Silas, E. G. Revision of Jerdon's work 'On the Freshwater Fishes of Southern India' (1840). (Seen in MSS.)

Family Sisoridae			
44.	<i>Glyptothorax madraspatanus</i> (Day)	...	9 81.75 - 94.75
Family Anguillidae			
45.	<i>Anguilla bengalensis</i> Gray	...	1 1000.00
Family Gobiidae			
46.	<i>Glossogobius giuris</i> (Hamilton)	...	7 86.00 - 150.00
Family Ophiocephalidae			
47.	<i>Channa gachua</i> (Hamilton)	...	14 50.00 - 85.50
Family Mastacembelidae			
48.	<i>Mastacembelus armatus</i> (Lacépède)	...	6 135.00 - 326.00

NOTES ON CERTAIN SPECIES

***Esomus barbatus* (Jerdon)**

1928. *Esomus barbatus*, Hora and Mukerji, *Rec. Ind. Mus.*, 30: 46.

Hora and Mukerji (loc. cit.), while discussing the taxonomy of this species, observed that 'it can be readily distinguished by its characteristic coloration (sides without black, broad, lateral bands) and by the possession of 17 predorsal scales', from *E. thermoicos* (Cuvier and Valenciennes).

In as many as thirty specimens of *E. barbatus* examined, it is found that the number of predorsal scales varies between 17 and 19. Fresh specimens also show a well-defined dark lateral band, about one scale in width, extending from the posterior margin of the orbit or from the operculum to the base of the caudal fin.

Thus it will be seen that both in the coloration and scalation there is considerable intergradation between *barbatus* of Peninsular India and *thermoicos* of Ceylon. As the minor differences noticeable between the two do not seem to be of specific importance, it is best to consider *thermoicos* as a subspecies of the earlier described *barbatus* as treated by Silas (1955).¹

This species is distributed throughout South India.

***Puntius carnaticus* (Jerdon)**

1932. *Barbus carnaticus*, Mukerji, *JBNHS*, 35: 164.

In a young specimen examined, there is a clear, dark precaudal spot extending over the penultimate lateral line scale. The outer margins of a few anterior scales along the lateral line show dark pigmentation.

Day (op. cit. p. 305) introduced this species in the Ootacamund Lake, but it seems to have failed to acclimatize itself there as no catch has been reported in recent years.

It is distributed in the rivers along the base of the Nilgiris, Wynaad, Mysore and South Kanara and in the Anamalai and Nelliampathi Hill ranges.

¹ Silas, E. G., *Bull. Nat. Inst. Sci. India*, No. 5. p. (1955).

Puntius micropogon (Valenciennes)

1941. *Barbus* (*Puntius*) *micropogon* Raj, *Rec. Ind. Mus.*, **43**: 382.

The specimens of *P. micropogon* in the present collection fall under group 3 as given by Raj, but they exhibit slight variations, which may be partly due to their smaller size. The number of scales along the lateral line are 41 and 42, and the L. tr. is $7\frac{1}{2}$ $11\frac{1}{4}$ -5. The diameter of the eye is contained 1.25 to 1.75 times in the snout.

The distribution of this species is in the rivers around the base of Nilgiris, Wynaad, Mysore and South Kanara. A subspecies, *viz.* *P. micropogon periyarensis* Raj has been described from the Periyar River in the Travancore Hills.

Labeo kontius (Jerdon)

1889. *Labeo kontius*, Day, Fauna, Brit. India, Fish. **1**, p. 264.

Since the specimens show some variations in the range of certain characters from Day's description, a brief account of the species is given below.

The length of the head is contained from 4.80 to 5.86 times in the total and 3.74 to 4.46 times in the standard length. The snout is contained 1.94 to 2.36 times in the head length. The eyes are situated 1.57 to 2.46 diameters behind the tip of the snout, and are 3.73 to 5.07 in the head length and 1.80 to 2.50 in the inter-orbital distance. The height of the body is contained 4.04 to 5.46 times in the total and 3.19 to 4.00 times in the standard length. There are 14 to 16 (3/11-13) dorsal fin rays. The number of lateral line scales ranges from 39 to 42; and the predorsal scales from 15 to 17. There are 8 to $9\frac{1}{2}$ rows of scales between the dorsal fin and the lateral line; $5\frac{1}{2}$ to $6\frac{1}{2}$ rows between the lateral line and pelvic fin and $6\frac{1}{2}$ to $7\frac{1}{2}$ rows between the lateral line and the origin of the anal fin. Scales round the caudal peduncle number 21 or 22 along the narrowest part.

L. kontius is distributed in Nilgiris and Mysore.

Noemacheilus monilis Hora

1921. *Nemachilus monilis*, Hora, *Rec. Ind. Mus.*, **22**: 19.

This is the first record of this beautifully coloured loach from the Bhavani river (Siruvani, a tributary stream) after its discovery in 1921.

In all essential features the two specimens in the present collection agree with Hora's detailed description except in the number of dorsal fin rays, which is $3\frac{1}{8}$ in one of the specimens. This would mean that in *N. monilis* the dorsal fin ray count is 3/7-8.

Mystus malabaricus (Jerdon)

1889. *Macrones malabaricus* Day, Fauna Brit. India, Fish. **1**, p. 160.

In most of the characters it conforms to Day's description of the species, except with regard to the pectoral and anal fin ray counts. The former shows a count of $1\frac{1}{7}$ *versus* (Day: $1\frac{1}{9}$). In the latter the number of rays varies from 11 to 13 ($3\frac{1}{4}$ -8-9) *versus* (Day: $2\frac{3}{8}$).

The species is distributed from Ratnagiri District in Bombay State down to Travancore.

***Mystus punctatus* (Jerdon)**

1889. *Macrones punctatus* Day, Fauna Brit. India, Fish, **x**, p. 153.

One specimen of *M. punctatus*, 320 mm. in length was obtained from the Moyar river at Mangalapatti. The specimen was taken on hook, which was laid at dusk and removed next morning. The predaceous nature of this species is seen from the fact that the stomach was found to contain a full-sized specimen of *Garra stenorhynchus* (Jerdon) 103 mm. in length and a severed head (25 mm. long) of the same species of *Garra*.

***Glyptothorax madraspatanus* (Day)**

1889. *Glyptosternum madraspatanum*, Day, Fauna Brit. India, Fish, **x**, p. 200.

1938. *Glyptothorax madraspatanus*, Hora, *Rec. Ind. Mus.*, **40** : 370.

1951. *Glyptothorax madraspatanus*, Silas, *JBNHS*, **50** : 368.

Nine specimens of *G. madraspatanus* were collected, of which five are females and the rest males. Since they show differences from Day's description and as the body proportions of adult males and females seem to differ in certain characters, a brief description of the species giving these details is appended below.

The length of the head is contained 4.86 to 5.54 (♂ 5.14–5.54; ♀ 4.86–5.21) and the depth of the body 4.93 to 8.04 (♂ 6.20–8.41; ♀ 4.93–6.70) times in the total length and 3.71 to 4.22 (♂ 3.87–4.22; ♀ 3.71–4.04) and 3.81 to 6.52 (♂ 4.71–6.41; ♀ 3.82–5.08) in the standard length respectively. The occipital process is 2.18 to 4.42 times as long as wide at its base. The dorsal spine is serrated at its upper third anteriorly and all along its posterior margin. The caudal peduncle is 1.68 to 2.17 times as long as high and the 'adhesive disc' on the ventral surface is 1.28 to 1.55 times as long as wide. The general body colour is yellowish grey, being darker on the head and anterior part of the body. There are two broad, transverse lighter bands, one from below the tip of the dorsal fin extending to about the middle of the adipose dorsal and the second from below the last third of the adipose dorsal to the base of the caudal fin. There is a black band at the base of the caudal fin followed by a broad white band. Each caudal lobe has a black band and the tips are white. The rayed dorsal, adipose dorsal, pectoral, pelvic and anal fins are tipped white. There is a dark band at the upper half of the dorsal fin extending along the first three rays. The ventral surface is dirty white. The region of the disc is yellowish. In gravid females the colour pattern is lighter while in mature males the entire dorsal surface is dark greyish.

G. madraspatanus is distributed in the Nilgiris and parts of Mysore.

ACKNOWLEDGEMENTS

I am deeply indebted to Dr. S. L. Hora, Director, Zoological Survey of India, for the facilities offered me to work out this collection, and to Dr. E. G. Silas, for all the help he has rendered me in the preparation of this paper. To the staff of the Madras Fisheries and Forest Departments and the Nilgiri Game Association my thanks are due for all the help rendered me while out in the field.